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B. Amendments to claims

1. (Amended) A method of producing olivine type nanostructured lithium metal phosphate of the formula, $\text{LiFe}_x\text{M}_{1-x}\text{PO}_4$, where $[0.]$ $1 \leq x \leq 0.1$ and M is a metal cation and having an olivine structure, comprising the following steps:

- (a) dispersing ~~iron hydroxide iron dextran~~ nanoparticles coated with a anti agglomeration molecule in a liquid solution,
- (b) at least one of the steps of :1) dissolving a metal salt in the liquid solution and 2) dispersing metal oxide nanoparticles in the liquid solution,
- (c) dissolving a phosphate ion containing chemical precursor in the liquid solution,
- (d) dissolving a lithium containing salt in the liquid solution,
- (e) heating the solution to promote the precipitation of $\text{LiFe}_x\text{M}_{1-x}\text{PO}_4$ precursor material, and
- (f) evaporating the liquid and heat treating calcining the solids $\text{LiFe}_x\text{M}_{1-x}\text{PO}_4$ precursor material for removing volatiles, and
- (g) annealing the $\text{LiFe}_x\text{M}_{1-x}\text{PO}_4$ precursor material to form and forming the olivine type nanostructured $\text{LiFe}_x\text{M}_{1-x}\text{PO}_4$ compound.

2. The method as claimed in Claim 1, wherein the metal salt is selected from the group consisting of: metal nitrate, metal carbonate, metal acetate, metal chloride, metal 2,-4

pentanedionate, metal formate, metal oxalate and metal alkoxides.

3. The method as claimed in Claim 1, wherein primary particle size of metal oxide nanoparticles is in the range of 5 – 100 nm, and the average secondary (aggregate) particle size is in the range of 25 – 1000 nm.

4. The method as claimed in Claim 1, wherein the phosphate ion containing chemical precursor is selected from the group consisting of : ammonium hydrogen phosphate, ammonium dihydrogen phosphate, ammonium phosphate, orthophosphoric acid, lithium dihydrogen phosphate, sodium hydrogen phosphate, sodium dihydrogen phosphate, di-(2-ethylhexyl)phosphoric acid.

5. The method as claimed in Claim 1, wherein lithium salt is selected from the group consisting of: lithium nitrate, lithium hydroxide, lithium carbonate, lithium chloride, lithium acetate and lithium iodide.

6. The method as claimed in Claim 1, wherein the average primary particle size of iron hydroxide or iron oxide nanoparticles is in the range of 5 – 100 nm.

7. The method as claimed in Claim 1, wherein the liquid solution is heated at a temperature in the range of 30 – 100 °C.

8. The method as claimed in Claim 1, wherein the solution is heated for a period in the range of 1 – 24 hrs.
9. The method as claimed in Claim 1, wherein the heating step is conducted at an atmospheric pressure in the range of 0.5 to 10 atmosphere.
10. The method as claimed in Claim 1, wherein M is selected from the group consisting of Mn, Co, Ni, and V.
11. (Amended) The method as claimed in Claim 1, wherein the LiFe_xM_{1-x}PO₄ precursor material dried solid as collected in Claim 10 is calcined at a temperature in the range of 200 – 600 °C for removing volatiles.
12. (Amended) The method as claimed in Claim 11, wherein the solid is calcined calcining takes place for a period in the range of 1 – 48 hrs in at least one of: an oxidizing atmosphere and an inert atmosphere.
13. (Amended) The method as claimed in Claim 12, wherein the calcined LiFe_xM_{1-x}PO₄ powder is heat-treated annealed at a temperature in the range of 400 – 800 °C.
14. (Amended) The method as claimed in Claim 13, wherein the calcined LiFe_xM_{1-x}PO₄ powder is heat-treated annealed in an inert atmosphere for a period in the range of 1 – 48

hrs.

15-25. (Cancelled)

26. (New) The method as claimed in Claim 1, wherein the nanostructured lithium metal phosphate of the formula, $\text{LiFe}_x\text{M}_{1-x}\text{PO}_4$ produced herein has a primary particle size of less than 100nm.

26. (New) The method as claimed in Claim 1, wherein the iron dextran nanoparticles have an average particle size in the range of 20-30nm.